

## Francis Witkowski, MSc

**Address:** Cambridge Carbonates Ltd., Northampton House, Poplar Road,  
Solihull, West Midlands B91 3AP, UK.

**Contact number:** +441217058472 (office), +44788 1788019 (cell)

**Emails:** [francis@cambridgecarbonates.co.uk](mailto:francis@cambridgecarbonates.co.uk)




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### Career Outline

- Employment:**
- 2005 – present: Cambridge Carbonates Ltd., UK:** Geologist and image analysis specialist, working on porosity systems and diagenesis. Run the company CL, Image Analysis and digitising systems.
- 2000 – 2004: Porosity Imaging Ltd., RHUL, London University UK:** Technical Manager for CL lab and image analysis of reservoir rocks.
- 1996 – 1999: Royal Holloway London University, Geology Dept, Egham, Surrey:**  
LINK Programme Principle Researcher in image analysis of carbonate reservoir rocks.
- 1988 – 1989: BP Exploration Ltd., Sedimentology Branch, London.** Geology Technical Assistant. Duties included computer data entry and retrieval, DTP and computer graphics for diagrams/well logs, photomicrography, SEM sample preparation.
- Summer 1988: British Geological Survey, Regional Geochemical Mapping Programme.** Fieldwork obtaining and collating geochemical samples.
- Core skills:**
- Key experience in Image Analysis of reservoir rocks using CL and SEM/BSEM
  - Geologist in carbonate/evaporite, karstic and tectonic fractured reservoir systems
  - Expertise in petrography, geochemistry, porosity and diagenesis
  - Integration of specialist IA/Fluid Inclusion/Element Mapping with petroleum geology
  - Experience of ESRI ArcGIS systems, Image Pro Plus, PhotoShop, Excel
  - Knowledge of reservoir porosity systems in Brazil, Middle East, NW+S Europe, Mexico, North Sea, Former Soviet Union, Africa, N. America & Far East
- Education:**
- 1992 – 1995:** Post-Grad Research: Investigation into Weathering of Locharbriggs Sandstone in Urban and Rural Outcrop Environments (*University of Paisley*).
- 1990 – 1991:** M.Sc. Natural Resources Management (*University of Leicester*).
- 1983 – 1988:** B.Sc. (Hons.) Geology, 2:1 (*University of Sheffield*).

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### Professional Experience

**2005 – Present: Geologist and IA Specialist, Cambridge Carbonates Ltd., UK.**

- Currently lead CL diagenesis researcher on Miran West, Kurdistan.
- Thin-section investigation and petrographic atlas preparation of microbialites, Tupi, Brazil.
- Part of the team assessing the Lower Cretaceous Umm Ghudair reservoir Kuwait
- Defining matrix and macropore systems and reservoir flow unit architecture in collapse, karst breccia and fractured carbonate systems using outcrop, core, and thin-sections in Cretaceous dual porosity reservoirs in Apricena, southern Italy. Co-presented at Karst from Recent to Reservoirs, Rapid City, S Dakota, June, 2008. Karst Waters Inst., Special Publication 14.

- CL, diagenesis, porosity analysis and reservoir potential of Tampico and Lomas del Real cored intervals, Mexican Gulf Coast.
- Jurassic oolite and dolomite fields of the Mexican Gulf coast including studies of the Sihil, San Andres, Arenque fields; undertaking core and thin-section image analysis for integration with sedimentological and log-based sequence stratigraphy to build static models for field re-activation and well placement.
- Diagenetic and porosity analysis of Norwegian low porosity and fractured Chalk reservoirs.
- Appraisal of mixed coarse breccio-conglomerate carbonates and clastics reservoir from the Congo (Tertiary) using core description and thin sections to establish facies and porosity distribution.
- Building an illustrated core log archive for Ukrainian fields (Late Devonian–Carboniferous) synthesised from prior reports and new material (e.g. thin-sections, core photos).
- Early appraisal of reservoir quality using thin section porosity analysis and CL techniques on Kurdistan (Late Cretaceous – Late Eocene) and Iraq (Mid Miocene) samples.
- Diagenetic and reservoir quality studies of geothermal dolomites and carbonates from the Zagros Mountains.

**1996 – 2004: Principle Researcher Porosity Analysis, Royal Holloway London University, Geology Dept.**

- Description of karst and brecciated Cretaceous carbonate reservoirs of the Cantarell field, offshore/onshore SE Mexico. Macro to matrix pore system characterisation by image analysis to produce unit cell data for modelling.
- CL and porosity study of Cretaceous Iranian outcrop limestones/dolomites to define diagenetic history and porosity evolution establishing a subsurface model to aid production.
- Carbonate exploration studies: Assessment of thin section, core and outcrop images as analogues to analyse different elements of geological risk in play types. Identifying karst, dolomite and matrix porosity in Dinantian carbonates of the onshore UK, southern North Sea and onshore Netherlands areas.
- Defining matrix pore systems by pore size distributions using petrographic image analysis on the Khuff dolomites of Oman.
- Several years developing porosity analysis techniques at a range of scales (primarily on carbonates but also clastics). Undertaken detailed studies of porosity systems in both dolomite and limestone reservoirs from Devonian to Mid Miocene ages including fractured, karst and low porosity systems.
- Taught courses on CL techniques/applications in hydrocarbon exploration for IMP, Mexico City and for staff/students at London University. Also supervised PhD, MSc, and M.Sci students/staff using the CL and image analysis facilities.
- Presented at several international conferences AAPG (San Antonio), Bathurst (Cambridge), AAPG/EAGE (El Paso) on Image Analysis techniques and their application to oil exploration

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## **Professional Affiliations**

Active member of:

- AAPG for over 10 years and SEPM for 5 years.